



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

May 1, 2014

Via E-mail

Todd A. Creech
Chief Financial Officer
ZS Pharma, Inc.
508 Wrangler Drive, Suite 100
Coppell, Texas 75019

**Re: ZS Pharma, Inc.
Draft Registration Statement on Form S-1
Confidentially Submitted April 4, 2014
CIK No. 0001459266**

Dear Mr. Creech:

We have reviewed your draft registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

General

1. Please submit all exhibits as soon as practicable. We may have further comments upon examination of these exhibits.
2. Please provide us proofs of any additional graphic, visual or photographic information you will provide in the printed prospectus prior to its use, for example in a preliminary prospectus. Please note that we may have comments regarding this material.
3. Please supplementally provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications. Similarly, please supplementally provide us with any research reports about you that are published or distributed in reliance upon Section 2(a)(3) of the Securities Act of 1933 added by

Section 105(a) of the Jumpstart Our Business Startups Act by any broker or dealer that is participating or will participate in your offering.

Risk Factors

“We have a limited operating history...” page 9

4. We note statements in the draft registration statement indicating substantial doubt about your ability to continue as a going concern on pages 60, 143 and F-2, including the report of your independent registered public accounting firm. Accordingly, please add language to this risk factor specifically addressing the doubts expressed by your auditor concerning your ability to continue as a going concern.

“If we fail to attract and keep senior management...” page 19

5. Please identify the members of your senior management to whom you refer in this risk factor and disclose, if applicable, any past difficulties attracting or retaining highly qualified personnel as well as knowledge of any departures in the foreseeable future.

Use of Proceeds, page 44

6. We note your statement that it is difficult to estimate with certainty the exact amounts of the net proceeds from this offering that may be used for the purposes you have listed. However, if the company has specific purposes in mind for the use of proceeds, Item 504 of Regulation S-K requires disclosure of the approximate amount intended to be used for each such purpose. This is required even if, as you state, management will retain broad discretion over the use of the net proceeds and that the amount and timing of your actual expenditures will depend on numerous factors. Please make any necessary conforming changes to your Prospectus Summary as well.

Capitalization, page 46

7. Please tell us why the issuance of the 4,764,629 shares of Series D Redeemable Preferred Stock on February 28, 2014 and the subsequent conversion into common stock upon the consummation of this offering is excluded from the pro forma capitalization.

Dilution, page 49

8. You state that your net tangible book value represents total tangible assets less total liabilities and convertible preferred stock. Yet the calculated amount \$9.1 million appears to exclude your convertible preferred stock. Please advise.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Critical Accounting Policies and Significant Estimates
Stock-Based Compensation, page 57

9. We may have additional comments on your accounting for stock compensation or any beneficial conversion features once you have disclosed an estimated offering price. Please supplementally provide us with a quantitative and qualitative analysis explaining the difference between the estimated offering price and the fair value of each equity issuance through the date of effectiveness for the preceding twelve months.

Business
Overview, page 64

10. Please disclose whether you currently have any active INDs. If so, please specify the filing date(s), indication(s) and name of the sponsor, if not the company, for which you have any active INDs.

Hyperkalemia Background
Cardio-Renal Protective RAAS Inhibitor Therapy is Limited by Hyperkalemia
Outcomes Studies Demonstrate the Importance of RAAS Inhibitor Therapy, page 68

11. Please spell out and provide the meaning of the abbreviated term "NIDDM."

ZS-9 Clinical Development Program and Regulatory Pathway, page 73

12. Please briefly summarize any pertinent feedback received in your meetings with the FDA concerning your trial design and the adequacy of your proposed clinical package and how such feedback has impacted, or is expected to impact, your clinical development of ZS-9.

Phase II Study, page 75

13. Please provide a brief explanation of the term "eGFR" as a measurement of CKD.

Competition, page 85

14. Please disclose the stage of development of the competing product candidate being developed by Relypsa in this discussion.

Intellectual Property
UOP License Agreement, page 87

15. We note your statement on page 87 that you "are required to pay UOP a mid-single digit royalty." We also note your statement on page 54 that you "will owe UOP royalties equal to 5% of worldwide net sales of ZS-9." Please revise your disclosure on page 87 to provide the same amount of detailed disclosure.

16. Please disclose the geographic scope of the rights sublicensed to HemoCleanse, Inc.

Certain Relationships and Related Party Transactions, page 117

17. Please file your Engagement Letter with Salem Partners, LLC as an exhibit to the registration statement or advise us why you believe this agreement need not be filed.

Shares Eligible for Future Sale, page 130

18. When available, please file a form of lock-up agreement as an exhibit to the registration statement.

If you intend to respond to these comments with an amended draft registration statement, please submit it and any associated correspondence in accordance with the guidance we provide in the Division's October 11, 2012 announcement on the SEC website at <http://www.sec.gov/divisions/corpfin/cfannouncements/drsfilingprocedures101512.htm>.

Please keep in mind that we may publicly post filing review correspondence in accordance with our December 1, 2011 policy (<http://www.sec.gov/divisions/corpfin/cfannouncements/edgarcorrespondence.htm>). If you intend to use Rule 83 (17 CFR 200.83) to request confidential treatment of information in the correspondence you submit on EDGAR, please properly mark that information in each of your confidential submissions to us so we do not repeat or refer to that information in our comment letters to you.

You may contact Scott Wuenschell at (202) 551-3705 or Joel Parker at (202) 551-3651 if you have questions regarding comments on the financial statements and related matters. Please contact Christina De Rosa at (202) 551-3577, Dan Greenspan at (202) 551-3623 or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Daniel Greenspan for

Jeffrey P. Riedler
Assistant Director

cc: Via E-mail
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